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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,878	09/15/2000	Akihiro Iino	S004-4102	4174

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EXAMINER

BUDD, MARK OSBORNE

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 10/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

663878

Applicant(s)

Iino et al

Examiner

M. Budd

Group Art Unit

2834

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 29-50 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 29-50 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

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Claims 29-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague and indefinite. In claims 29, 36, 42, 49 and 50 it is unclear how many "rotational shafts" or "longitudinal axis" are claimed. The phraseology of the claims rendering "a longitudinal axis --- of a rotational shaft" rather than "the" axis and "the" shaft raises the question of exactly what is being claimed. How can a rotor have more than one longitudinal shaft and/or longitudinal axis? In claim 29 there is no explicit structural cooperation between the "moving body" and the rest of the motor structure; i.e. how or where are they connected or contacted? The same problem occurs in claim 46 wherein the "moving body" has no defined structural cooperation with e.g. the "transmission member". Claim 42 is indefinite in that it is unclear whether the "second transmission member" actually contacts anything ("first end for contacting"). The same is true of the "moving body" (claims 42, 49 and 50) and the "pressing member". Each is described in terms of "being" capable of" (for ---) rather than an actual statement that the particular part is actually contacting or pressing etc. In claim 49, "a second pressurizing mechanism" is confusing since no "first" mechanism is claimed. In claim 50, "the support member" has no antecedent basis.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

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art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-37, 39-41 and 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Miyata or Naka in view of Honda ('047), Vasileu or Adachi.

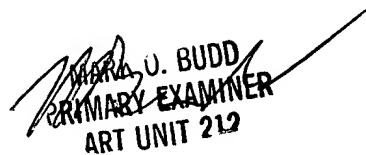
Miyata (figs. 5 and 10) teaches a piezoelectric rotary motor with a member (#52) being moved linearly across the rotary axis as it is engaged in the cam slot #51. The cam with slot is fully equivalent to a cam surface with no slot. Naka (figs. 1 and 2) also teaches a rotary piezoelectric motor with the output converted to linear motion across the rotary axis: Note both the film and the head of the pawl #21, #31. They don't explicitly teach a spring bias between the conversion mechanism (gears or cams) and the output mechanisms. However, if a pressing bias were needed the problem would be self evident from the performance of the device e.g. too much noise, excessive wear, loss of drive power. Placing a pressing bias in a transmission system to remedy such problems is well known per se and would have been obvious to one of ordinary skill in the art. Each of Honda ('047) (figs. 7 and 8), Vasileu (figs. 1, 4, 5, 6, 9 and 11) and Adachi (figs. 1-3) teach a pressure bias used in a piezoelectric motor to improve the power transfer from relatively moving parts. The bias in Adachi also biases any slack in the shaft and not thread drive. Honda ('047) (figs. 7 and 8) shows a preload spring biasing the rotor/output shaft to the stator. Likewise, Vasileu (arrow P) teaches a preload to prevent slippage of the mating surfaces. Note also the fluid pressure in chamber #1 of Miyata provides a bias on the transmission elements. Lastly, Naka, fig. 2 clearly shows a spring (unnumbered) biasing pawl (#31) against

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the gear #23. Thus to provide a pressure bias would have been obvious to one of ordinary skill in the art.

Claim 38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 42-45, 49 and 50 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.


MARK U. BUDD
PRIMARY EXAMINER
ART UNIT 212